

CLAIMS

What is claimed is:

1. A network for distributing news messages comprising:
 - at least two agents, each of said agents executing on a node, and each agent capable of distributing news messages between said nodes and capable of receiving news messages from other agents;
 - at least two news loggers;
 - a first communications link coupled between said agents and a second communications link coupled between said news loggers and said agents.
2. The network of claim 1, wherein said news messages comprise at least one message generated by a process executing on said node.
3. The network of claim 2, wherein said news messages are at least one of an error message, a failover message, a synchronization message and a hardware message.
4. The network of claim 1, wherein said node is at least one of a computer host, a computer server, a storage node, a file-system, a location independent file system and a geographically distributed computer system.
5. The network of claim 1, wherein said news logger is a process executing on said node.

6. The network of claim 5, wherein said news logger process further comprises a database for the purpose of backup of said news messages.

7. The network of claim 1, wherein said news loggers are used for synchronizing between said agents.

8. The network of claim 1, wherein said first communications link and said second communications link are at least one of a local area network (LAN), a wide area network (WAN), a peripheral component interconnect (PCI) network, and an InfiniBand network.

9. The network of claim 1, wherein said first communications link and said second communications link are based on at least one of a multicast protocol, a unicast protocol and a broadcast protocol.

10. The network of claim 1, wherein said agent further comprises:

- a subscription database;
- a news service;
- a distribution unit; and
- a news environment.

11. The network of claim 10, wherein said news messages are saved in

said subscription database.

12. The network of claim 10, wherein said news environment comprises:

- an initialization thread;
- a receiving thread;
- a sending thread; and
- a synchronization thread.

13. The network of claim 10, wherein said subscription database is stored on at least one of a RAM memory, a flash memory, a cache memory, a disk, and a hard disk.

14. The network of claim 10, wherein data in said subscription database is organized as a category tree.

15. The network of claim 14, wherein a category in said category tree comprises one or more subcategories.

16. The network of claim 14, wherein a category in said category tree comprises a process list and a message list.

17. The network of claim 10, wherein said distributing news messages

further comprises:

- checking the validity of said news messages;
- saving valid news messages in said subscription database;
- sending said valid news messages to said news loggers;
- waiting for an acknowledgement signal from said news loggers;
- sending said valid news messages to designated agents.

18. The network of claim 17, wherein checking the validity of said news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of a previously received message.

19. The network of claim 17, wherein saving valid news messages in said subscription database comprises dropping an older news message with a newer news message if said database is full.

20. The network of claim 19, wherein dropping news messages is performed by a least recently used algorithm, a random algorithm, a first-in first-out algorithm, a time-to-live algorithm, or a round robin algorithm.

21. The network of claim 17, wherein said agents wait for an acknowledgement signal from said news loggers for a predetermined amount of time.

22. The network of claim 17, wherein a unicast protocol is used for sending said valid news messages to said news loggers.

23. The network of claim 17, wherein a multicast protocol is used for sending said valid news messages to designated agents.

24. The network of claim 10, wherein receiving news messages comprises:

 checking the validity of incoming news messages;
 passing valid news messages to said distribution unit; and
 distributing said valid news messages to said processes.

25. The network of claim 24, wherein checking the validity of incoming news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of a previously received message.

26. The network of claim 24 wherein distributing said valid news messages to said processes comprises:

 searching said database for processes who requested said news messages;
 and
 sending said valid news messages to said requesting processes.

27. The network of claim 10, wherein said agent is capable of providing historical information.

28. The network of claim 27, wherein providing historical information comprises:

querying said subscription database;
sending the query results to said process.

29. A method for handling news messages using a network comprising of at least two agents, wherein each agent executes on a node, and at least two news loggers, wherein the method comprises:

distributing said news messages; and
receiving said news messages.

30. The method of claim 29, the method further comprises:

initializing each of said agents; and
providing historical information.

31. The method of claim 29, wherein said news messages comprise messages generated by a process executing on said node.

32. The method of claim 31, wherein said news messages are at least

one of an error message, a failover message, a synchronization message and a hardware message.

33. The method of claim 29, wherein said node is at least one of a computer host, a computer server, a storage node, a file-system, a location independent file system and a geographically distributed computer system.

34. The method of claim 29, wherein said news logger is a process executing on said node.

35. The method of claim 34, wherein said process further comprises a database.

36. The method of claim 35, wherein said database backs up said news messages.

37. The method of claim 29, wherein said news loggers are used for synchronizing between said agents.

38. The method of claim 29, wherein each of said agents further comprises:

a subscription database;

a news service;

a distribution unit; and

a news environment.

39. The method of claim 38, wherein said subscription database backs up said news messages.

40. The method of claim 38, wherein said news environment comprises:

an initialization thread;

a receiving thread;

a sending thread; and

a synchronization thread.

41. The method product of claim 39, wherein said subscription database is organized as a category tree.

42. The method of claim 41, wherein a category in said category tree comprises one or more subcategories.

43. The method of claim 42, wherein a category in said category tree comprises a process list and a message list.

44. The method of claim 43, wherein said subscription database is

stored on at least one of a RAM memory, a flash memory, a cache memory, a disk, and a hard disk.

45. The method of claim 29, wherein said process is a computational task executing on said node.

46. The method of claim 40, wherein said distributing news messages comprises:

- receiving said news messages from said process;
- checking the validity of said news messages;
- saving valid news messages in said subscription database;
- sending said valid news messages to said news loggers;
- waiting for acknowledgement signal from said news loggers; and
- sending said valid news messages to designated agents.

47. The method of claim 46, wherein receiving said news messages from said process uses said news service.

48. The method of claim 46, wherein checking the validity of said news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of a previously received message.

49. The method of claim 46, wherein saving valid news messages in said subscription database comprises dropping an older news message with a newer news message if said database is full.

50. The method of claim 49, wherein dropping news messages is performed by a least recently used algorithm, a random algorithm, a first-in first-out algorithm, a time-to-live algorithm, or a round robin algorithm.

51. The method of claim 46, wherein said agents wait for an acknowledgement signal from said news loggers for a predetermined amount of time.

52. The method of claim 46, wherein said synchronizing thread is used for sending said valid news messages to said news loggers.

53. The method of claim 46, wherein said sending thread is used for sending said valid news messages to designated agents.

54. The method of claim 40, wherein said receiving news messages comprises:

- receiving said news messages from said agents;
- extracting incoming news messages;
- checking the validity of said incoming news messages;

passing valid news messages to said distribution unit; and
distributing said valid news messages to a process.

55. The method of claim 54, wherein receiving said news messages from said agents uses said receiving thread.

56. The method of claim 54, wherein checking the validity of said incoming news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of a previously received message.

57. The method of claim 54, wherein distributing said valid news messages to a process comprises:

searching in said subscription database for processes who requested for said news messages; and
sending said valid news messages to said processes.

58. The method of claim 40, wherein initializing an agent comprises:
creating a subscription database; and
registering at least a process for news services.

59. The method of claim 58, wherein creating a database comprises
allocating memory.

60. The method of claim 58, wherein registering a process for news services comprises that each said process register to at least one category in said database.

61. The method of claim 40, wherein providing historical information comprises:

querying said subscription database; and
sending query results to said process that requested the query.

62. A computer software product for handling news messages using a network comprising at least two agents, wherein each agent executes on a node, and at least two news loggers, said computer software product comprises:

software instructions for enabling said network to perform predetermined operations, and a computer readable medium bearing the software instructions, wherein said predetermined operations comprise:

distributing said news messages; and
receiving said news messages.

63. The computer software product of claim 62, said predetermined operations further comprise:

initializing each of said agents; and
providing historical information.

64. The computer software product of claim 62, wherein said news messages comprise messages generated by a process executing on said node.

65. The computer software product of claim 62, wherein said node is at least one of a computer host, a computer server, a storage node, a file-system, a location independent file system and a geographically distributed computer system.

66. The computer software product of claim 62, wherein said news logger is a process executing on said node.

67. The computer software product of claim 66, wherein said process comprises a database.

68. The computer software product of claim 67, wherein said database backs up said news messages.

69. The computer software product of claim 62, wherein said news loggers are used for synchronization between said agents.

70. The computer software product of claim 62, wherein each of said agents further comprises:

a subscription database;

a news service;

a distribution unit; and

a news environment.

71. The computer software product of claim 70, wherein said subscription database saves said news messages.

72. The computer software product of claim 70, wherein said news environment comprises:

an initialization thread;

a receiving thread;

a sending thread; and

a synchronization thread.

73. The computer software product of claim 71, wherein said database is organized as a category tree.

74. The computer software product of claim 73, each category in said category tree comprises one or more subcategories.

75. The computer software product of claim 74, wherein a category in said category tree comprises a process list and a message list.

76. The computer software product of claim 75, wherein said subscription database is stored on at least one of a RAM memory, a flash memory, a cache memory, a disk, and a hard disk.

77. The computer software product of claim 62, wherein said process is a computational task executing on said node.

78. The computer software product of claim 72, wherein said distributing news messages comprises:

- receiving said news messages from said process;
- checking the validity of said news messages;
- saving valid news messages in said subscription database;
- sending said valid news messages to said news loggers;
- waiting for acknowledgement signal from said news loggers; and
- sending said valid news messages to designated agents.

79. The computer software product of claim 78, wherein said news service is used for receiving said news messages from said process.

80. The computer software product of claim 78, wherein checking the validity of said news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of

a previously received message.

81. The computer software product of claim 78, wherein saving valid news messages in said subscription database comprises dropping an older news message with a newer news message if said database is full.

82. The computer software product of claim 81, wherein dropping news messages is performed by a least recently used algorithm, a random algorithm, a first-in first-out algorithm, a time-to-live algorithm, or a round robin algorithm.

83. The computer software product of claim 78, wherein said agents wait for an acknowledgement signal from said news loggers for a predetermined amount of time.

84. The computer software product of claim 78, wherein said synchronizing thread is used for sending said valid news messages to said news loggers.

85. The computer software product of claim 78, wherein said sending thread is used for sending said valid news messages to designated agents.

86. The computer software product of claim 78, wherein said

receiving news messages further comprises:

- receiving said news messages from said agents;
- extracting incoming news messages;
- checking the validity of said incoming news messages;
- passing valid news messages to said distribution unit; and
- distributing said valid news messages to a process.

87. The computer software product of claim 86, wherein receiving said news messages from said agents uses said receiving thread.

88. The computer software product of claim 86, wherein checking the validity of said incoming news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of a previously received message.

89. The computer software product of claim 86, wherein distributing said valid news messages to a process comprises:

- searching in said subscription database for processes who requested for said news messages; and
- sending said valid news messages to said processes.

90. The computer software product of claim 72, wherein initializing an agent comprises:

creating a subscription database; and
registering at least a process for news services.

91. The computer software product of claim 90, wherein creating a database comprises allocating memory.

92. The computer software product of claim 90, wherein registering a process for news services comprises that each said process register to at least one category in said database.

93. The computer software product of claim 72, wherein providing historical information comprises:

querying said subscription database; and
sending query results to said process that requested query.

94. A computer system adapted for handling news messages, the computer system comprising:

a network comprising at least two agents, wherein each agent executes on a node in the computer system, and at least two news loggers;

a memory comprising software instructions adapted to enable the computer system to:

distribute said news messages; and
receive said news messages.

95. The computer system of claim 94, said software instructions being further adapted to enable the computer system to:

initialize each of said agents; and
provide historical information.

96. The computer system of claim 94, wherein said news messages comprise messages generated by a process executing on said node.

97. The computer system of claim 94, wherein said node is at least one of a computer host, a computer server, a storage node, a file-system, a location independent file system and a geographically distributed computer system.

98. The computer system of claim 94, wherein said news logger is a process executing on said node.

99. The computer system of claim 98, wherein said process comprises a database.

100. The computer system of claim 99, wherein said database backs up said news messages.

101. The computer system of claim 95, wherein said news loggers are

used for synchronization between said agents.

102. The computer system of claim 95, wherein each of said agents further comprises:

- a subscription database;
- a news service;
- a distribution unit; and
- a news environment.

103. The computer system of claim 102, wherein said subscription database saves said news messages.

104. The computer system of claim 102, wherein said news environment comprises:

- an initialization thread;
- a receiving thread;
- a sending thread; and
- a synchronization thread.

105. The computer system of claim 103, wherein said database is organized as a category tree.

106. The computer system of claim 105, each category in said category

tree comprises one or more subcategories.

107. The computer system of claim 106, wherein a category in said category tree comprises a process list and a message list.

108. The computer system of claim 107, wherein said subscription database is stored on at least one of a RAM memory, a flash memory, a cache memory, a disk, and a hard disk.

109. The computer system of claim 94, wherein said process is a computational task executing on said node.

110. The computer system of claim 104, wherein said distributing news messages comprises:

receiving said news messages from said process;
checking the validity of said news messages;
saving valid news messages in said subscription database;
sending said valid news messages to said news loggers;
waiting for acknowledgement signal from said news loggers; and
sending said valid news messages to designated agents.

111. The computer system of claim 78, wherein said news service is used for receiving said news messages from said process.

112. The computer system of claim 110, wherein checking the validity of said news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of a previously received message.

113. The computer system of claim 110, wherein saving valid news messages in said subscription database comprises dropping an older news message with a newer news message if said database is full.

114. The computer system of claim 113, wherein dropping news messages is performed by a least recently used algorithm, a random algorithm, a first-in first-out algorithm, a time-to-live algorithm, or a round robin algorithm.

115. The computer system of claim 110, wherein said agents wait for an acknowledgement signal from said news loggers for a predetermined amount of time.

116. The computer system of claim 110, wherein said synchronizing thread is used for sending said valid news messages to said news loggers.

117. The computer system of claim 110, wherein said sending thread is used for sending said valid news messages to designated agents.

118. The computer system of claim 110, wherein said receiving news messages further comprises:

receiving said news messages from said agents;
extracting incoming news messages;
checking the validity of said incoming news messages;
passing valid news messages to said distribution unit; and
distributing said valid news messages to a process.

119. The computer system of claim 118, wherein receiving said news messages from said agents uses said receiving thread.

120. The computer system of claim 118, wherein checking the validity of said incoming news messages comprises checking if the news message was received from a known process or checking if the news message is a duplicate of a previously received message.

121. The computer system of claim 118, wherein distributing said valid news messages to a process comprises:

searching in said subscription database for processes who requested for said news messages; and
sending said valid news messages to said processes.

122. The computer system of claim 104, wherein initializing an agent comprises:

creating a subscription database; and
registering at least a process for news services.

123. The computer system of claim 122, wherein creating a database comprises allocating memory.

124. The computer system of claim 122, wherein registering a process for news services comprises that each said process register to at least one category in said database.

125. The computer system of claim 104, wherein providing historical information comprises:

querying said subscription database; and
sending query results to said process that requested query.